

Appl. No. 10/612,007
Amendment dated: January 26, 2006
Reply to OA of: October 26, 2005

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(currently amended). A barium titanate film synthesizing process comprising the steps of:

(a) coating a titanium film on the surface of a substrate, said titanium film having a grain size which is in nano-scale; and

(b) synthesizing a barium titanate film on the titanium-coated substrate in an electrolyte containing barium ions by electrochemically anodic oxidation.

2(previously presented). The barium titanate film synthesizing process as claimed in claim 1, wherein said substrate is selected from the group consisting of titanium, glass, ceramics, polymers, and silicon.

3(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said titanium film is deposited on said substrate by sputtering.

4(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said titanium film is deposited on said substrate by evaporation.

5(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said electrolyte is an alkaline solution of $\text{Ba}(\text{CH}_3\text{COO})_2$ and NaOH .

6(original). The barium titanate film synthesizing process as claimed in claim 5, wherein the concentration of $\text{Ba}(\text{CH}_3\text{COO})_2$ is within about 0.35-0.5 M; the concentration of NaOH is 2 M.

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7(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said electrochemically anodic oxidation is achieved by voltage within 0.4 V~3 V.

8(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said electrochemically anodic oxidation is achieved by a voltage scan rate within 10 mV/s~50 mV/s.

9(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said electrochemically anodic oxidation is achieved within 20 seconds to 24 hours.

10(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said electrochemically anodic oxidation is performed at a processing temperature within 30°C~90°C.

11(original). The barium titanate film synthesizing process as claimed in claim 1, wherein said electrochemically anodic oxidation is performed at a processing temperature over 50°C.

12(new). The barium titanate film synthesizing process as claimed in claim 1, wherein the nano-scale ranges from 1 nm to 100nm.